NOVEMBER/DECEMBER 2024

FCS21 — C++ AND DATA STRUCTURE

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define Token.

2. Show the syntax of defining a class in C++.

3. How will you do type conversion in C++?

4. What is the purpose of templates?

5. List out the Queue operations.

6. Give any two applications of Linked Lists.

7. Define Recursion.

8. List out the tree traversal techniques.

9. What are the drawbacks of Bubble sort algorithm?

10. Define Hashing.

Shanmuga Industries Arts & Science College
T.V.Malai

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the principles of Object Oriented Programming.

Or

(b) Illustrate the Looping statements with suitable example.

12. (a) Illustrate the purpose of Virtual functions in C++ with a suitable code.

Or

(b) List and explain any five string handling functions.

13. (a) Outline the applications of Stack.

Or

(b) Describe the structure of doubly linked list.

14. (a) What is Binary search tree? How will you implement it?

Or

(b) Compare BFS and DFS algorithms.

Shanmuga Industries Arts & Science College T.V.Malai

15. (a) Illustrate the selection sort algorithm with suitable example.

Or

(b) Discuss the benefits of Hashing technique.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Develop a C++ code to implement constructors.

17. Explain Operator overloading and write a program to overload binary operator.

18. Describe the procedure to convert an arithmetic expression from infix to postfix notation using stack operations.

19. Illustrate Dijkstras shortest path algorithm with suitable example.

20. Explain Binary search technique and give the merits of binary search technique.

———————